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QUERY CONTROL FORM				RTIS USE ONLY	
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SPECIFICATION

a. Page Missing
b. Text Continuity
c. Holes through Data
d. Other Missing Text
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g. Brief Description
h. Sequence Listing
i. Appendix
j. Amendments
k. Other

CLAIMS

a. Claim(s) Missing
b. Improper Dependency
c. Duplicate Numbers
d. Incorrect Numbering
e. Index Disagrees
f. Punctuation
g. Amendments
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MESSAGE

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Thank you,

initials MR

RESPONSE

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JBH 4-27-04 DOC.072CIP

THICK WAFER PROCESSING AND RESULTANT PRODUCTS

this application is a continuation-in-part of prior application No. 09/983,278, filed Oct. 23, 2001 and claims the benefit of provisional application 60/273321 filed 3/6/01.

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention is directed to a method of processing thick wafers and the resultant products, more particularly to lithographic processing and separating of thick wafers.

Description of Related Art

[0002] Automated semiconductor processing equipment has been designed for wafer thicknesses generally on the order of 0.5mm-1.5 mm. Some classes of semiconductor processing equipment are even more limited. The chucks used to support the wafers in the stepper are of a fixed thickness. The chucks could be thinned to accommodate thicker wafers, but this results in a less rigid chuck and could compromise performance. Also, the chucks may only be thinned so far.

[0003] When thick wafers, i.e., those having thicknesses not accommodated by current processing equipment, e.g., on the order of 2mm or thicker, are to be processed, the automated semiconductor processing equipment could be redesigned to allow such processing. However, this redesign will most likely compromise current performance and/or require significant tool modifications. Further, each time a greater thickness is desired, further redesign would be required.

[0004] Even once thick wafers have the desired features formed thereon, there are other problems in vertically separating the thick wafers to produce the individual parts. This separation is required to realize the mass production advantages offered by wafer level processing.

SUMMARY OF THE PRESENT INVENTION

[0005] The present invention is therefore directed to a method of processing thick wafers, including separating them into individual components, and the resultant structures which substantially overcomes one or more of the problems due to the limitations and disadvantages of the related art.

[0006] At least one of the above and other objects may be realized by providing a method of vertically separating a thick wafer having a top surface and a bottom surface, the thick wafer being on a dice support. The method includes aligning a first dicing tool for a first dice with the